IN THE CLAIMS:

Rewrite the pending claims and add new claims as follows:

1.   (Currently Amended) A method of assigning a buffer size in a video decoder, comprising:

establishing a first buffer size for a scalable buffer;

processing a video data stream with said scalable buffer configured to said first buffer size;

selecting a second buffer size for said scalable buffer;

processing said video data stream with said scalable buffer configured to said second buffer size;

creating memory utilization data characterizing cache memory performance during the processing with said scalable buffer configured to said first buffer size and the processing with said scalable buffer configured to said second buffer size; and

assigning a buffer size that is dependent upon said first buffer size and said second buffer size for said scalable buffer in accordance with said memory utilization data;

wherein the memory utilization data includes cache miss rate data and the cache memory is distinct from the scalable buffer.

2.   (Previously Presented) The method of claim 1 wherein said establishing and said selecting each include defining a buffer size as a multiple of a buffer size for storing a single macroblock.

3.   (Previously Presented) The method of claim 1 wherein said processing includes utilizing said scalable buffer with a variable length decoder.

4.   (Previously Presented) The method of claim 1 wherein said processing includes utilizing said scalable buffer with an inverse discrete cosine transfer function module.

5.   (Previously Presented) The method of claim 1 wherein said processing includes utilizing said scalable buffer with a motion compensator.

6.   (Previously Presented) The method of claim 1 wherein said creating includes creating cache utilization data defining data cache miss rates.

7.   (Previously Presented) The method of claim 1 wherein said creating includes creating cache utilization data defining instruction cache miss rates.

8.   (Previously Presented) The method of claim 1 further comprising modifying the size of video data stream processing instructions to correspond to said buffer size selected in said assigning step.

9.   (Previously Presented) The method of claim 8 wherein said modifying includes loop unrolling video data stream processing instructions to correspond to said buffer size selected in said assigning step.

10-12. (Canceled)

13.   (Currently Amended) A computer readable memory to direct a computer to function in a specified manner, comprising:

        a buffer management module to establish a first buffer size and a second buffer size for a scalable buffer;

        a video decoding module to process a video stream with said scalable buffer configured to said first buffer size and then said second buffer size; and

        an analysis module to create memory utilization data characterizing cache memory performance during the processing with said scalable buffer configured to said first buffer size and during the processing with said scalable buffer configured to said second buffer size, said analysis module including a buffer size adjuster to assign a buffer size that is dependent upon said first buffer size and said second buffer size for said scalable buffer in accordance with said memory utilization data;

        wherein the memory utilization data includes cache miss rate data and the cache memory is distinct from the scalable buffer.